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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/689,548	10/11/2000	James E. Johnson	INVDP001	8999

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EXAMINER

GORDON, BRIAN R

ART UNIT PAPER NUMBER

1743

DATE MAILED: 02/20/2003

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Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Applicati n No.

09/689,548

Applicant(s)

JOHNSON ET AL.

Examiner

Brian R. Gordon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 11 October 2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-62 is/are pending in the application.
- 4a) Of the above claim(s) 15-58 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-3, 5-14 and 59-62 is/are rejected.
- 7) ☒ Claim(s) 4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 09 January 2002 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 5.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Election/Restrictions

1. Restriction to one of the following inventions is required under 35 U.S.C. 121:
 - I. Claims 1-14 and 59-61, drawn to a hybrid valve apparatus, classified in class 422, subclass 103.
 - II. Claims 15-26, drawn to a manifold assembly, classified in class 422, subclass 100.
 - III. Claims 27-58, drawn to a fluid transfer apparatus, classified in class 422, subclass 100.

The inventions are distinct, each from the other because of the following reasons:

2. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination of Group I does not require the plurality of conduits, the aspiration ports of the conduits in communication with an aspiration source. The subcombination has separate utility such as it may be attached or in communication with other systems such as vacuum pumps.
3. Inventions I and II are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2)

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that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination of Group I does not require the particulars of the manifold as described in reference to the stator face and the particulars of the type of aspiration and dispensing conditions. The combination also does not require the multiple aspiration and dispensing ports. The subcombination has separate utility such as to prevent back flux of samples into the source and to transfer multiple samples from multiple sources.

4. Inventions III and I are related as combination and subcombination. Inventions in this relationship are distinct if it can be shown that (1) the combination as claimed does not require the particulars of the subcombination as claimed for patentability, and (2) that the subcombination has utility by itself or in other combinations (MPEP § 806.05(c)). In the instant case, the combination as claimed does not require the particulars of the subcombination as claimed because the combination of Group I does not require the plurality of conduits, the aspiration ports of the conduits in communication with an aspiration source. The subcombination has separate utility such as it may be attached or in communication with other systems such as vacuum pumps.

5. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

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6. Because these inventions are distinct for the reasons given above and the search required for Group II is not required for Group I and III, restriction for examination purposes as indicated is proper.
7. Because these inventions are distinct for the reasons given above and have acquired a separate status in the art because of their recognized divergent subject matter, restriction for examination purposes as indicated is proper.
8. During a telephone conversation with Michael L. Louie on January 31, 2003 a provisional election was made without traverse to prosecute the invention of Group I, claims 1-14 and 59-61. Affirmation of this election must be made by applicant in replying to this Office action. Claims 15-58 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.
9. Applicant is reminded that upon the cancellation of claims to a non-elected invention, the inventorship must be amended in compliance with 37 CFR 1.48(b) if one or more of the currently named inventors is no longer an inventor of at least one claim remaining in the application. Any amendment of inventorship must be accompanied by a request under 37 CFR 1.48(b) and by the fee required under 37 CFR 1.17(i).

Specification

10. The lengthy specification has not been checked to the extent necessary to determine the presence of all possible minor errors. Applicant's cooperation is requested in correcting any errors of which applicant may become aware in the specification.
11. The disclosure is objected to because of the following informalities:

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On page 18 and throughout the specification reference numeral 22 designates both "dispensing actuator" and "dispensing source". It is unclear if the two elements are one in the same. If so, then consistent terminology should be used.

On page 20 and throughout the specification reference numeral 21 designates both "aspiration actuator" and "aspiration source". It is unclear if the two elements are one in the same. If so, then consistent terminology should be used. *OK*

Appropriate correction is required.

Claim Rejections - 35 USC § 112

12. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

13. Claim 1,-2, 5-6, 12, 14, and 59 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear if applicant is attempting to claim the "aspiration actuator", "dispensing actuator", and "sample path" as elements of the invention. Applicant has claimed the "manifold" and other elements and their function in terms relative to the actuators; however as presently drafted the actuators are included within the preamble of the claim and are not considered to be required in applicant's invention. For examination purposes the claim has been interpreted in the broadest manner in which it requires a valve assemble movable between conditions, a manifold device providing an aspiration conduit with first and second ports, fluid dispensing conduit with first and

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second ports. It appears as if the actuators and the sample path should be clearly included as elements of the invention.

In claim 1, it is unclear what exactly applicant considers as the "sample path". Is the "sample path" a portion of the "aspiration conduit", "dispensing conduit", or a separate conduit?

see pag 18 of remarks

14. Claim 59 recites the limitation "the dispensing actuator" in line 12. There is insufficient antecedent basis for this limitation in the claim. *OK*

Claim Rejections - 35 USC § 102

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

15. Claims 1-3, 5-13 and 59-62 are rejected under 35 U.S.C. 102(b) as being anticipated by Naono US 4,120,661.

Naono discloses a rotating valve body and a fixed valve body, said rotating body and fixed body having radial surfaces in sliding contact. The radial surface of the rotating body is provided with one or more internal sampling outlet ports arranged on the circumference of a circle having a center coincident with the axis of the rotating body. The side wall of said rotating body is provided with one or more external sampling inlet ports. Pairs of unlike ports are connected by ducts in said rotating body. The external sample inlet ports are connected to a sample tube, or tubes or sample suction tube or tubes which rotate together with the rotating valve body. The radial surface of the fixed valve body is provided with a single internal sample inlet port located the same distance from the axis as the internal sample outlet ports. The internal sample inlet port

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is directly linked to two ports in the sidewall of the fixed valve body by two ducts which join together at the internal inlet, said ducts being connected to a reagent tank via a sampling pump, changeover valve, reagent pump, and a reaction beaker via said changeover valve.

The rotating body 32 (rotor) initially rotates (as the body/stator 31 remains still) so as to establish a condition as shown in FIG. 3. That is to say, so that internal sample outlet ports 34a, 34b, etc. do not align with the internal sample inlet port 39. In this condition, samples 50a, 50b, etc. contained in sample tubes 37a, 37b, etc. (reservoir) flow out through feed lines 38a, 38b, etc. (with aspiration ports) Next, the ducts 35a, 35b, etc. are filled with respective samples as follows: The rotating body 32 commences to turn stepwise so that internal sample outlet ports 34a, 34b, etc. register with internal sample inlet port 39 successively. As each outlet port (34a, etc.) registers with inlet port 39, the sampling pump 46 comes into operation and draws sample into ducts 40 and 41, said small amount of sample being allowed to drain into a waste bath (not shown) via feed line 45 and the flow path changeover valve 47.

Next, the changeover valve 47 operates so as to connect ports B to C and A to D (dispense/aspiration ports), which is the reagent flush position, and the piston 51 of sampling pump 46 (actuator) is moved towards the cylinder head. The reagent pump 48 now comes into operation with the result that feed line 44, ducts 40 and 41 and feed line 45 fill up with reagent from the reagent tank 52. This state of affairs is shown cross-sectionally in FIG. 4(a).

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Sampling now commences. First of all, as illustrated in FIG. 4(b), the changeover valve 47 operates so as to connect ports A to B and C to D, which is the sample drawing position in which ducts 40 and 41 are not only connected at port 39 but through the changeover valve. The rotating body 32 rotates so that port 34a registers with port 39. (It is possible to place the changeover valve in an all ports closed position when drawing sample as explained hereafter. The advantage of externally connecting ducts 41 and 40 through the changeover valve during the sample drawing is that sample is drawn into both ducts 41 and 40. If the valve were placed in the all ports closed position, sample is drawn only into duct 40 and may reach the sample drawing piston which is not desired.)

With the changeover valve now in the sample drawing position and the internal inlet port aligned with one internal outlet port, by withdrawing the piston 51 of sample drawing pump 46 in the direction indicated by the arrow Q a predetermined amount (thus enlarging the volume defined by the ducts 40, 41, 44, 45, the duct in the changeover valve and the sampling pump piston 51), a suitable volume of sample (corresponding to the increase in volume due to movement of the sampling pump piston) flows from duct 35a into ducts 40 and 41. The rotating body 32 then rotates so that the port 34a does not register with port 39 as shown in FIG. 4(c).

Next, the changeover valve 47 operates so as to revert to the B to C and A to D, position, i.e., the reagent flush position, as shown in FIG. 4(d). The piston 51 moves in the direction indicated by the arrow P. Additionally, the reagent pump 48 is reactivated (FIG. 4(e)) and the reagent, together with the measured sample in ducts 40 and 41, is

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forced into the reaction beaker 49 (test site) (through the nozzle member coupled to the primary passage comprised of segment AD, see fig. 4e). Subsequently, sample from the same sample tube 37a or from another sample tube, e.g., sample tube 37b, is measured out and the same process as heretofore described is repeated.

In the above described embodiment, feed lines 38a, 38b, etc. run from the base of the respective sample tubes and link up with ports 36a, 36b, etc. As an alternative to this arrangement, sample tubes having a sealed base with feed lines inserted from above would be quite acceptable.

Further, by providing a plurality of internal sample inlet ports 39 instead of just a single port as described above, and by providing the requisite number of ducts (two per port), sampling of a plurality of samples can be carried out simultaneously. It is also possible to use two simple on-off changeover valves. In this case, one valve would be installed between pumps 46 and 48, and a second valve would serve to changeover feed line 45 and the reaction beaker 49. Both valves would be open connecting during the reagent flushing step and closed during the sample drawing steps.

Allowable Subject Matter

16. Claims 4 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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17. Claim 14 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, second paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

18. The following is a statement of reasons for the indication of allowable subject matter: The prior art of Naono does not teach nor fairly suggest that ~~an~~^{the} transverse cross-sectional area of the primary passage is from about 0.2 mm² to 0.8 mm² or that the device includes a digitally regulated hydraulic pressure system in fluid communication with the dispensing actuator for precision operation thereof.

Conclusion

19. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Vann et al., Uffenheimer et al., Takii et al., Doktycz et al., Fuerst et al., Fondse, Chau, Siddiqui et al., Dorenkott et al., Fukunaga, Laursen, Lewis et al., Schultz et al., Wilson et al., Shu et al., Tanaka, Broerman, Coassin, Rosenberg et al., Manz, Bemis et al., Starr, Feier et al., Cabrera et al., Miwa et al., Goodale et al., Ayers et al., Hurrell, Turpin, and Smith et al. disclose fluid transfer and valve assemblies.


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Brian R. Gordon whose telephone number is (703) 305-0399. The examiner can normally be reached on M-F, with 2nd and 4th F off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jill Warden can be reached on 703-308-4037. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

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Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

brg
February 6, 2003


Jill Warden
Supervisory Patent Examiner
Technology Center 1700